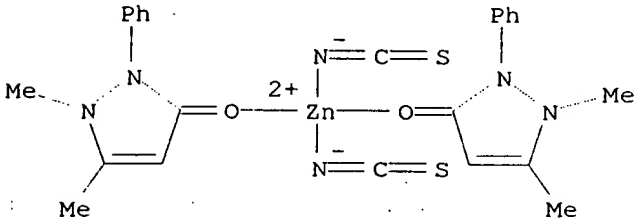
IT Chemically resistant materials
(plasticizer-resistant; thermal printing material contg. leuco dye, zinc thiocyanate antipyrine complex as developer, and **aluminum**-contg. salt)
IT Solvent-resistant materials
Thermal printing
(thermal printing material contg. leuco dye, zinc thiocyanate antipyrine complex as developer, and **aluminum**-contg. salt)
IT 10043-01-3, **Aluminum** sulfate 57292-32-7, **Aluminum** sulfate hydrate
RL: MOA (Modifier or additive use); USES (Uses)
(thermal printing material contg. leuco dye, zinc thiocyanate antipyrine complex as developer, and **aluminum**-contg. salt)
IT **20002-47-5** 125864-21-3
RL: TEM (Technical or engineered material use); USES (Uses)
(thermal printing material contg. leuco dye, zinc thiocyanate antipyrine complex as developer, and **aluminum**-contg. salt)
IT **20002-47-5**
RL: TEM (Technical or engineered material use); USES (Uses)
(thermal printing material contg. leuco dye, zinc thiocyanate antipyrine complex as developer, and **aluminum**-contg. salt)
RN 20002-47-5 HCAPLUS
CN Zinc, bis(1,2-dihydro-1,5-dimethyl-2-phenyl-3H-pyrazol-3-one-.kappa.O3)bis(thiocyanato-.kappa.N)-, (T-4)- (9CI) (CA INDEX NAME)



L12 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1996:83129 HCAPLUS
DN 124:160011
TI Electron transport properties in dye-sensitized nanocrystalline/nanostructured titanium dioxide films
AU Lindstroem, Henrik; Rensmo, Haakan; Soedergren, Sven; Solbrand, Anita; Lindquist, Sten-Eric
CS Department of Physical Chemistry, University of Uppsala, Uppsala, S-75121, Swed.
SO J. Phys. Chem. (1996), 100(8), 3084-8
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
CC 74-1 (**Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes**)
AB Spectral response measurements have been performed on dye-sensitized nanocryst. TiO2 photoelectrodes. The effects of film thickness, electron scavengers in the electrolyte, and surface treatment of the nanocryst. film were studied by means of action spectra for front- and back-side **illumination**. Our results show that electron acceptors such as dioxygen and iodine strongly decrease the IPCE. Surface treatment of the electrode with pyridine induces a substantial increase of the photocurrent yields. The observations are discussed in terms of kinetics at the semiconductor-electrolyte interface. IPCE values for sandwich cells were generally much higher than those obtained from three-electrode measurements.
IT electron transport dye sensitized titanium dioxide
IT Electron, conduction
(transport properties in dye-sensitized nanocryst./nanostructured

titanium dioxide photoelectrodes)

IT Electrodes
(photoelectrochem., electron transport properties in dye-sensitized nanocryst./nanostructured titanium dioxide)

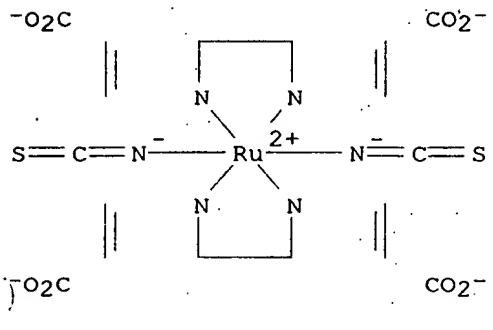
IT 13463-67-7, Titanium dioxide, properties
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(electron transport properties in dye-sensitized nanocryst./nanostructured photoelectrodes of)

IT **141460-19-7**
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electron transport properties in nanocryst./nanostructured titanium dioxide photoelectrodes sensitized by)

IT **141460-19-7**
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electron transport properties in nanocryst./nanostructured titanium dioxide photoelectrodes sensitized by)

RN 141460-19-7 HCAPLUS

CN Ruthenate(4-), bis[[2,2'-bipyridine]-4,4'-dicarboxylato(2-)-.kappa.N1,.kappa.N1']bis(thiocyanato-.kappa.N)-, tetrahydrogen, (OC-6-21)-(9CI) (CA INDEX NAME)



● 4 H^+

L12 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2000 ACS

AN 1995:205779 HCAPLUS

DN 122:251785

TI Enhanced Spectral Sensitivity from Ruthenium(II) Polypyridyl Based Photovoltaic Devices

AU Argazzi, Robert; Bignozzi, Carlo A.; Heimer, Todd A.; Castellano, Felix N.; Meyer, Gerald J.

CS Centro di Studio su Fotoreattivita e Catalisi, CNR, Ferrara, 44100, Italy

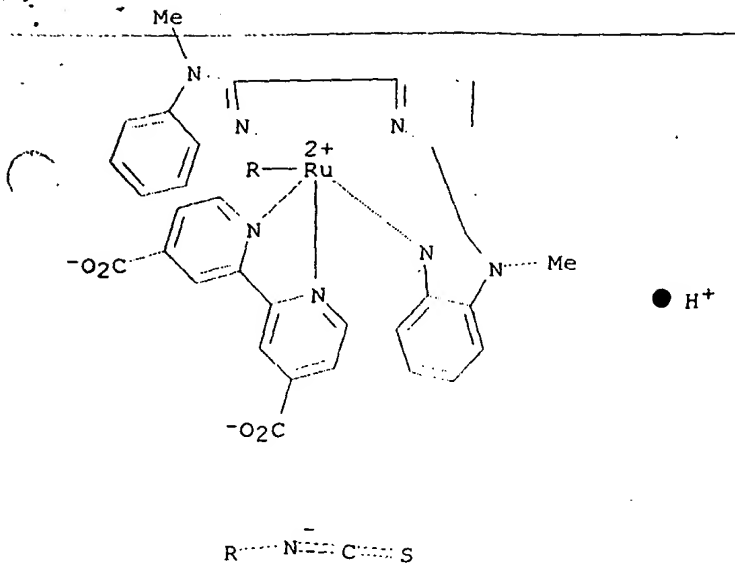
SO Inorg. Chem. (1994), 33(25), 5741-9
CODEN: INOCAJ; ISSN: 0020-1669

DT Journal

LA English

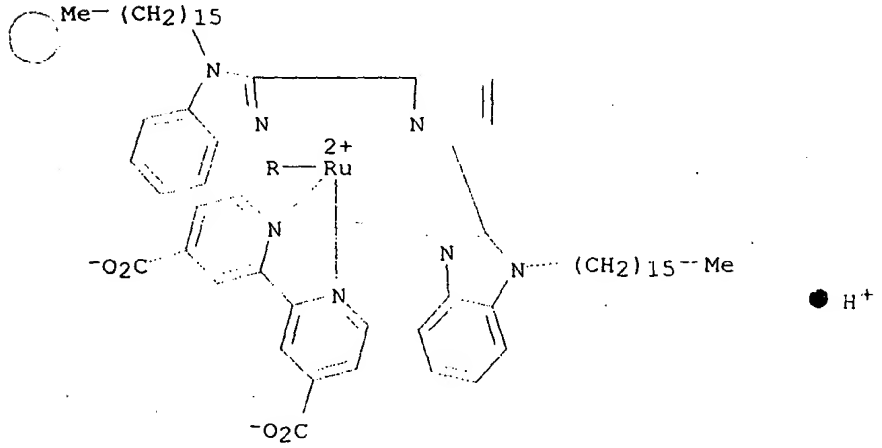
CC 74-1 (**Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes**)
Section cross-reference(s): 52, 78

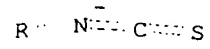
AB Ruthenium polypyridyl compds., cis-[4,4'-(CO2H)2-2,2'-bipyridine]2Ru(X)2 and cis-[5,5'-(CO2H)2-2,2'-bipyridine]2Ru(X)2 where X = Cl-, CN-, and SCN-, have been prepd. spectroscopically characterized, and anchored to high surface area TiO2 electrodes for the conversion of visible light into electricity. Vibrational studies reveal a surface ester linkage and indicate that the sensitizers bind to TiO2 through a distribution of interfacial interactions in a similar manner. When operating in a photoelectrochem. cell, these materials convert visible photons into



IT **201335-46-8P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., absorption and **luminescence** spectra, resonance Raman, and redox potentials of)

RN 201335-46-8 HCAPLUS
CN Ruthenate(1-), [[2,2'-bipyridine]-4,4'-dicarboxylato(2-)-.kappa.N1,.kappa.N1'][2,2'-(2,6-pyridinediyl-.kappa.N)bis[1-hexadecyl-1H-benzimidazole-.kappa.N3]](thiocyanato-.kappa.N)-, hydrogen, (OC-6-13)-(9CI) (CA INDEX NAME)

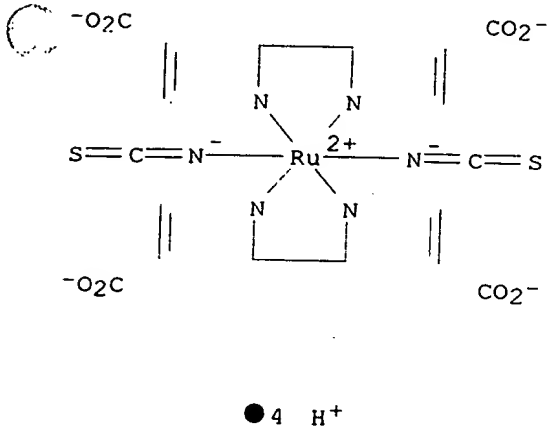




L7 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2000 ACS
AN 1997:72240 HCAPLUS
DN 126:165714
TI Structure of Nanocrystalline TiO2 Powders and Precursor to Their Highly Efficient Photosensitizer
AU Hermann, R.; Graetzel, M.; Nissen, H.-U.; Shklover, V.; Nazeeruddin, M.-K.; Zakeeruddin, S. M.; Barbe, C.; Kay, A.; Haibach, T.; Steurer, W.
CS Laboratory of Crystallography and Laboratory for Electron Microscopy I, Swiss Federal Institute of Technology, Zurich, CH-8092, Switz.

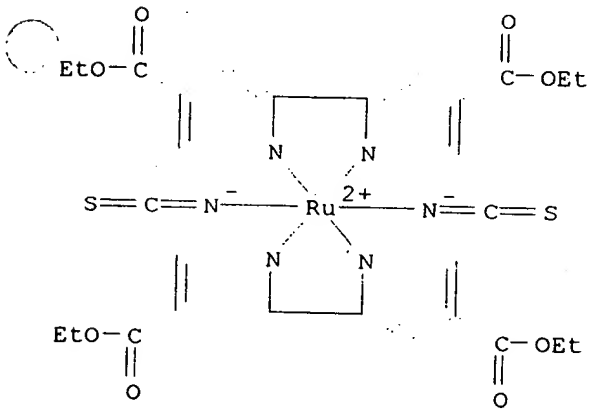
SO Chem. Mater. (1997), 9(2), 430-439
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 74, 75, 76
AB SEM, high-resoln. TEM (HRTEM), and powder XRD studies on nanocryst. TiO2 powders and thin films are presented. The size, shape (mostly exposed faces), and ordering of the TiO2 anatase particles in the nanocryst. films are discussed. The use of the topochem. approach, which considers the properties of (nanocryst.) solids in terms of crystallog. features of (nano)crystals is suggested. The surface area of sensitizer [bis(4,4'-dicarboxy-2,2'-bipyridine)bis(thiocyanato)]**ruthenium** (II) [abbreviated as cis-**Ru**(dcbpy)2(NCS)2] on the semiconductor surface for the different types of anchoring is estd. from single-crystal x-ray diffraction studies of the esterified form of the complex.
ST titanium dioxide nanocryst powder film structure; crystal structure **ruthenium** dicarboxybipyridine thiocyanato; **ruthenium** dicarboxybipyridine thiocyanato prepn titania surface; photosensitizer **ruthenium** dicarboxybipyridine thiocyanato titania surface; topochem titania nanoparticle **ruthenium** complex photosensitizer
IT Surface area
(of bis(dicarboxybipyridine)bis(thiocyanato)**ruthenium** sensitizer on nanocryst. TiO2 via different anchoring types)
IT Luminescence
(of **ruthenium** dicarboxybipyridine thiocyanato)
IT Crystal structure
Molecular structure
(of **ruthenium** dicarboxybipyridine thiocyanato complex)
IT Nanocrystals
(structure of nanocryst. TiO2 powders and precursor to their highly efficient photosensitizer)
IT 141460-19-7D, anchored on nanocryst. titanium dioxide surface
186888-32-4D, anchored on nanocryst. titanium dioxide surface
RL: PRP (Properties)
(estd. surface area as sensitizer)
IT 1134-35-6, 4,4'-Dimethyl-2,2'-bipyridine
RL: RCT (Reactant)
(for prepn. of **ruthenium** dicarboxybipyridine thiocyanato photosensitizer)
IT 1762-42-1P, 4,4'-Bis(ethoxycarbonyl)-2,2'-bipyridine 6813-38-3P, 4,4'-Dicarboxy-2,2'-bipyridine 109835-97-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(for prepn. of **ruthenium** dicarboxybipyridine thiocyanato photosensitizer)
IT 186888-33-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure of, as model for anchoring as sensitizer on nanocryst. TiO2 surface)
IT **141460-19-7P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., **luminescence**, and model for anchoring as sensitizer on nanocryst. TiO2 surface)
IT **186888-32-4P**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. structure, hydrolysis, **luminescence**, and model for anchoring as sensitizer on nanocryst. TiO2 surface)
IT 13463-67-7P, Titanium dioxide, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(structure of nanocryst. TiO2 powders and precursor to their highly efficient photosensitizer)
IT **141460-19-7P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., **luminescence**, and model for anchoring as sensitizer on nanocryst. TiO2 surface)

RN 141460-19-7 HCAPLUS
CN Ruthenate(4-), bis[[2,2'-bipyridine]-4,4'-dicarboxylato(2-)-.kappa.N1,.kappa.N1']bis(thiocyanato-.kappa.N)-, tetrahydrogen, (OC-6-21)-(9CI) (CA INDEX NAME)



● 4 H^+

IT **186888-32-4P**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. structure, hydrolysis, luminescence, and model for anchoring as sensitizer on nanocryst. TiO2 surface)
RN 186888-32-4 HCAPLUS
CN Ruthenium, bis(diethyl [2,2'-bipyridine]-4,4'-dicarboxylate-.kappa.N1,.kappa.N1')bis(thiocyanato-.kappa.N)-, (OC-6-21)- (9CI) (CA INDEX NAME)



L7 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2000 ACS
AN 1996:417998 HCAPLUS
DN 125:81284
TI Long lifetime anisotropy (polarization) probes for clinical chemistry, immunoassays, affinity assays and biomedical research
IN Lakowicz, Joseph R.; Szmacinski, Henryk; Terpetschnig, Ewald
PA USA
SO PCT Int. Appl., 68 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-53
ICS G01N033-58; G01N033-60
CC 9-10 (Biochemical Methods)